REMARKS

Specification:

The Examiner stated that a "Brief Summary of the Invention" as provided in MPEP 608.01(d) is missing. An Applicant cannot be required to provide a "Brief Summary of the Invention" as described in MPEP section 608.01(d). Applicants note that MPEP 608.01(d) and 37 CFR 1.73 and 1.77, upon which MPEP 608.01(d) is based, merely provide guidelines. "A brief summary of the invention... *should* precede the detailed description. Such summary should, *when set forth*...." (37 C.F.R. 1.73, included in MPEP 608.01(d), emphasis added.) The Federal Courts have agreed, stating it is, "important to note that the language of § 1.73 is not mandatory (ie. 'should' as opposed to 'must')." Fox Industries, Inc. v. Structural Preservation Sys., 6 U.S.P.Q.2D (BNA) 1577 (1988). Note that § 1.73 uses the same "should" language. Applicants therefore assert that a Brief Summary of the Invention section may be omitted, and Applicants prefer to do so.

The Examiner stated the list of inventors should be removed from page 1 of the specification. However, the Examiner has cited no authority supporting such a requirement. As noted above, the relevant rule uses the term "should" as opposed to "must." Further, while the rule states what "should" be included, it does set forth any language about whether additional information must be excluded. Nothing in 37 CFR 1.77 excludes a list of inventors. Absent a relevant authority that states that additional material such as a list of inventors must not be included, Applicants will maintain the list of inventors as filed.

Drawings:

The Examiner objected to the drawings under 37 CFR 1.83(a), stating that the drawings do not show a second well with a depth greater than the first well as recited in claim 6.

Applicants point out that the Figures as originally filed do illustrate such an arrangement. Figures 6c and 6d illustrate a first well (506 in Fig. 6c) and a second well (512 in Fig. 6d) with a depth greater than the first well. Such first and second wells are described in paragraphs [0047] and [0048] of the specification.

In the Claims:

Claims 1-11, 13-19, and 21-26 remain in this application. Claims 9, 15, and 16 have been amended. Claims 12 and 20 have been canceled. New claims 21-26 have been added.

Rejections Under 35 U.S.C. 103(a):

Claims 1, 2, 4, 5, 9, 10, 13, 14, and 16-19 were rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida et al. (U.S. Pub. 2004/0040042705) (hereinafter "Uchida").

Uchida fails to disclose or suggest all limitations of claim 1; the rejection is unsupported in the art and should be withdrawn. Claim 1 recites "adjusting the optical redirector to redirect light into the optical via so that the light is coupled into the optical fiber." The Examiner failed to address this limitation in the rejection. Uchida does not disclose or suggest such an adjustment of the optical redirector. A rejection of claim 2 over Uchida is not supported in the art.

Applicants note that in the rejection of claim 8, the Examiner cites Kilian (U.S. Pub. 2004/0101259) (hereinafter "Kilian") as disclosing adjusting the optical redirector. Because one of skill in the art would not be motivated to combine Uchida and Kilian to result in the

method as recited in claim 1, a rejection of claim 1 over Uchida and Kilian would be unsupported in the art.

First, because Uchida requires no adjustment, one of skill in the art would not add the additional complexity of an adjustment step. As taught by Uchida, the optical redirector 46 is conical and "scatters the light output of the emitter 22 radially to the vertical axis of the reflector and more or less evenly in a circumferential direction around the cylindrical wall surface 28 of the hole." (Uchida, [0026].) Thus, because the light is scattered all around the cylinder, the reflector 46 of Uchida does not need adjustment.

Second, the motivation cited by the Examiner to combine Uchida with Kilian, "to maximize light throughput," is not supported by the references. Because Uchida teaches that maximizing light throughput is not important, one of skill in the art would have no motivation to do so. Uchida, at paragraph [0028] states that, "Since the transmission distances on a circuit board are short, relatively loose optical coupling between the fiber end faces and the photo emitter/detector elements is normally sufficient. For this same reason it is not critical that the end faces of the optical fibers be polished to a high degree. Consequently, scattered light directed toward the optical fiber end face will typically deliver sufficient radiation to the fiber core for effective transmission of the optical signal. Similarly, diffuse light emitted at the receiver end of the optical fiber and generally directed onto the photo detector element 54 will normally produce a sufficient electrical output signal from detector unit 52." Thus, the motivation cited by the Examiner in the rejection of claim 8, that one of skill in the art would want to maximize light throughput, is simply not there. Uchida teaches that maximum light throughput is not necessary, and that scattered or diffuse light, or a loose optical coupling is sufficient. As there is no motivation within the cited references for one of

skill in the art to combine Uchida with Kilian as suggested by the Examiner, the Examiner has not set forth a proper prima facie rejection of claim 1 under 35 U.S.C. 103(a).

Claims 2, 4, and 5 depend from claim 1. As a rejection of claim 1 over Uchida (or Uchida combined with Kilian) is not supported in the art, rejections of claims 2, 4, and 5 are similarly unsupported in the art and should be withdrawn.

Claim 9, as amended, recites that the optical redirector is attached to a bottom surface of the optical via by attachment material. As Uchida fails to disclose such an arrangement the rejection should be withdrawn. Rather than attaching an optical redirector to a bottom surface of the optical via, Uchida discloses suspending optical redirectors within a hole (Uchida, paragraph [0026], lines 8-11 and 36-38; Figure 1).

Claims 10, 13, and 14 depend from claim 9. As a rejection of claim 9 over Uchida is not supported in the art, rejections of claims 10, 13, and 14 are similarly unsupported in the art and should be withdrawn.

Claim 16, as amended, recites that matrix material includes a layer with a plurality of woven structural fibers and that the embedded optical fiber is woven with the structural fibers to form the layer. As these limitations were previously present in claim 20, the rejection of claim 20 is addressed here. Claim 20 was rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida in view of Jiang et al. (U.S. Patent 6,757,176) (hereinafter "Jiang"). The cited references fail to disclose or suggest all limitations of claim 16; the rejection is unsupported in the art and should be withdrawn.

None of the cited references disclose or suggest an optical fiber woven with the structural fibers to form the layer. While Jiang discloses a layer with woven fibers, they are woven structural fibers, and do not include a woven optical fiber. Thus, if Jiang were combined with Uchida, the resulting device would have a core layer with woven structural

fibers (Jiang, col. 3, lines 54-62), surface layers free of fibers (Jiang, col. 3, lines 64-65), and a laminated optical fiber sheet between the surface layers (Uchida, paragraph [0015]). Note that while Figure 1 of Uchida shows a three layer board, this is just for simplicity and ease of illustration (Uchida, end of paragraph [0024]). Thus, because the cited references fail to disclose or suggest optical fibers woven with structural fibers, the rejection is unsupported in the art and should be withdrawn.

Claims 17-19 depend from claim 16. As a rejection of claim 16 is not supported in the art, rejections of claims 17-19 are similarly unsupported in the art and should be withdrawn.

Claims 3, 6, and 11 were rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida in view of Umebayashi et al. (U.S. Pub. 2004/0091211) (hereinafter "Umebayashi").

Claim 3 depends from claim 1. As stated above, a rejection of claim 1 is not supported by Uchida and Kilian because Uchida fails to disclose adjusting the optical redirector and one of skill in the art would not be motivated to combine Kilian with Uchida. Umebayashi fails to rectify the deficiencies of the other references.

The references fail to disclose or suggest all limitations of claim 6; the rejection is unsupported in the art and should be withdrawn. Claim 6 recites a second well having a depth greater than the first well. The Examiner's statement that Uchida, in Figure 1, discloses a second well deeper than the first well is incorrect. Figure 1 provides absolutely no information about the relative depths of the wells.

Claim 11 depends from claim 9. As stated above, Uchida fails to disclose an optical redirector attached to a bottom surface of the optical via. Umebayashi fails to rectify this deficiency.

Claims 7-8 were rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida in view of Kilian (U.S. Pub. 2004/0101259) (hereinafter "Kilian").

Claims 7 and 8 depend from claim 1. As stated above with respect to claim 1, one of skill in the art would not be motivated to combine Uchida and Kilian to result in the method as recited in claim 1. The rejection is unsupported in the art and should be withdrawn.

Claim 15 was rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida in view of Umebayashi and further in view of Kilian.

None of the cited references disclose or suggest that optically neutral material substantially fills otherwise empty space within the optical via, as is recited in claim 15. The rejection is unsupported in the art and should be withdrawn.

Respectfully submitted,

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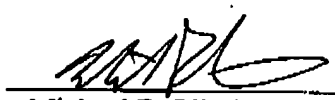

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